

CLAIM AMENDMENTS

1. (currently amended) A freeze resistant buoy system comprising a tail-tube buoy having a thermally insulated section disposed predominantly above a waterline, said buoy further comprising a thermo-siphon disposed predominantly below said waterline, said thermo-siphon comprising a lower region configured for extracting sensible heat from water that contacts said lower region and an upper region for transferring latent heat to water that contacts said upper region.
2. (original) A freeze resistant buoy system in accordance with claim 1 wherein said thermo-siphon comprises a porous heat-exchange material and a heat transfer fluid.
3. (original) A freeze resistant buoy system in accordance with claim 2 wherein said porous heat-exchange material comprises graphite foam.
4. (original) A freeze resistant buoy system in accordance with claim 1 further comprising stabilizing collar attached to the housing.
5. (original) A freeze resistant buoy system in accordance with claim 4 wherein said stabilizing collar is located at least proximate to an interface between said lower section and said upper section.
6. (currently amended) A freeze resistant buoy system comprising: a tail-tube buoy having a thermally insulated section disposed predominantly above a waterline; ~~a thermally conducting section disposed predominantly below said waterline~~ said buoy further comprising a thermo-siphon disposed predominantly below said waterline, said thermo-siphon comprising a lower region configured for extracting sensible heat from water that contacts said lower region and an upper region for transferring latent heat to water that contacts said upper region; and a system housed within the buoy system for collecting and analyzing samples.

7. (original) A freeze resistant buoy system in accordance with claim 6 wherein said system further comprises at least one device selected from the group consisting of mechanical, chemical, biological, electrical, electronic, sonic, and optical devices.
8. (original) A freeze resistant buoy system in accordance with claim 6 wherein said system further comprises: a detector for detecting at least one toxic agent in a water sample; and introducing means for introducing a water sample into said detector and discharging said water sample from said detector.
9. (original) A device in accordance with claim 8 wherein said detector further comprises a fluorometer for measuring photosynthetic activity of naturally occurring, indigenous photosynthetic organisms drawn into said detector system.
10. (original) A device in accordance with claim 8 wherein said detector further comprises an electronics package that analyzes raw data from said detector and emits a signal indicating the presence of at least one toxic agent in said water.
11. (original) A device in accordance with claim 8 that can wherein said device is configured as a component of an integrated data highway to which signal from said detector can provide the location and time of the introduction of at least one toxic agent in said water.